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UTILITY VALUE OF PUREBRED LIVESTOCK

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"What results, from a utility standpoint, can I expect from purebred livestock?" This question, in substance, is being asked the department with increasing frequency by livestock owners. They indicate a desire for better and more profitable farm animals, but comparatively few, judging from the inquiries, aspire to become specialized breeders. The demand is rather for knowledge of the earning power of purebred stock in terms of meat, milk, wool, eggs, and other market products.

Simultaneously field studies of the department in recent years show wide variations in the proceeds received by farmers for livestock and their products. Under approximately the same set of conditions some stockmen have operated at a profit, while others have shown a loss.

The higher price levels which constantly prevail for superior animals, meats, wool, eggs, and the like have indicated strongly that the type of breeding animals used has much to do with profit and loss. The more specific evidence and figures here reported have been possible through the assistance of stockmen participating in the

"better sires—better stock" campaign, a systematic plan conducted by the United States Department of Agriculture and various States in improving the average quality of livestock in the country.

SOURCES OF INFORMATION

Records of this work include the names of stockmen who have used purebred sires exclusively for a number of years, the kinds of stock kept, and the number of sires and females kept for breeding by each person. The information here presented is based on two questionnaires, the first conducted in 1921 and the second in 1924. The former resulted in replies from 525 farmers and stockmen in 36 States. The latter included results supplied by 653 livestock owners in 45 States. These persons owned a total of more than 50,000 head of livestock and poultry, and in answer to a series of questions furnished the department with specific replies, figures, and experiences.

The animals owned by persons answering the questionnaires included purebreds, crossbreds, grades, and scrub animals. Thus there was ample basis for comparison. Information obtained as described is necessarily approximate. It lacks the preciseness of experimental work, but has the advantage of including vastly more livestock than is commonly handled in experiments. It includes also many more factors, such as experiences in buying and selling and the general attitude of owners toward purebred stock on which they depend for a living.

The personal factor in raising livestock, especially purebreds, is highly important though difficult to analyze. The careful reader will recognize, however, that personal ability and "knack" in handling animals are essential for the highest degree of success. Besides the differences in quality among scrub, grade, and purebred animals, there is also a wide difference between good and poor purebreds. These considerations need to be kept in mind in studying the results of the questionnaires.

SIGNIFICANCE OF TERM "PUREBRED"

Because of the frequent use of purebred in this discussion, let us have clearly in mind what a purebred animal signifies. "A purebred animal," as defined by the Bureau of Animal Industry, "is one of pure breeding representing a definite, recognized breed and both of whose parents were purebred animals of the same breed. To be considered purebred, livestock must be either registered, eligible to registration, or (in the absence of a public registry for that class) have such lineage that its pure breeding can be definitely proved." To be of good type and quality, the animal must be healthy, vigorous, and a creditable specimen of its breed. The results of the first questionnaire follow.

RESULTS OF FIRST QUESTIONNAIRE

EARNING POWER OF PUREBREDS AS UTILITY ANIMALS

Based on utility alone—apart from its breeding or sale value—purebred livestock appears to be over one-third more efficient than

common stock in all classes of farm animals. The superiority is most marked among dairy cattle.

TABLE 1.—*Superiority, based on utility alone, of purebred over common livestock*

Class	Superior earning power
	<i>Per cent</i>
Dairy cattle.....	47.8
Poultry.....	40.7
Swine.....	38.3
Sheep.....	37.8
Horses.....	37.2
Beef cattle.....	36.8
Goats.....	36.8
All classes (weighted average).....	40.4

Thus purebred livestock in the experience of the persons furnishing data earned about 40 per cent more for their owners than the scrub stock used for comparison. The average period of comparison was nine years.

The relatively high percentages representing the earning power of well-bred dairy cattle and poultry over scrubs are explained doubtless by the better facilities for keeping production records of these classes of livestock, thereby contributing to their improvement. Illustrating this point for cattle, a New England dairyman attributes his increased returns from purebred dairy cows over scrubs to the fact that "more attention is paid to testing and feeding. Consequently there is more weeding out of the poorer cows, which results in building up a better herd." A Florida poultryman described how by trap nesting his flock he increased the annual egg production per hen from 80 to 150. This was accomplished by selection and feeding without introducing new blood.

THE SUPERIORITY OF PUREBREDS ANALYZED

The respects in which purebred animals excel ordinary stock include a great variety of points, which fall into the convenient groups listed in Table 2. Figures in the table show the relative importance of each group in the opinion of the livestock owners reporting.

TABLE 2.—*Points in which purebred animals surpass common stock*

Chief points of superiority	Per cent of total comment	Chief points of superiority	Per cent of total comment
Better conformation and quality.....	14.6	Uniformity (factor in making sales).....	8.9
Better selling price of animals.....	12.8	Early maturity.....	7.8
Increased production.....	12.1	Ease of fattening and finishing.....	5.7
Stock more salable.....	11.9	Better prices for products.....	3.0
More product for the feed.....	9.2	Increased vigor.....	2.7
Owner's interest and pride (results in better care and greater returns).....	9.2	Docility and ease of handling.....	2.1

Several hundred comments and explanatory remarks accompanied the information contained in Table 2. A few typical ones illustrate the significance of the various points listed.

"My purebred stock weigh as much at 15 months," a Virginia farmer remarks, "as my scrubs did at 3 years—a saving of 21 months in feed and labor, besides getting a better price. They are early maturing, easy keepers, and good producers." Figure 1 illustrates this point pictorially.

A Pennsylvanian adds: "My cows have more than doubled in milk production. Scrub and grade cows used to give me about 4,000 pounds of milk a year, while my purebreds average over 8,000 pounds."

A breeder in Washington State makes this observation: "I find the young of purebred stock are uniformly good, while with scrub stock there usually are 1 or 2 good ones to 8 or 10 poor ones."

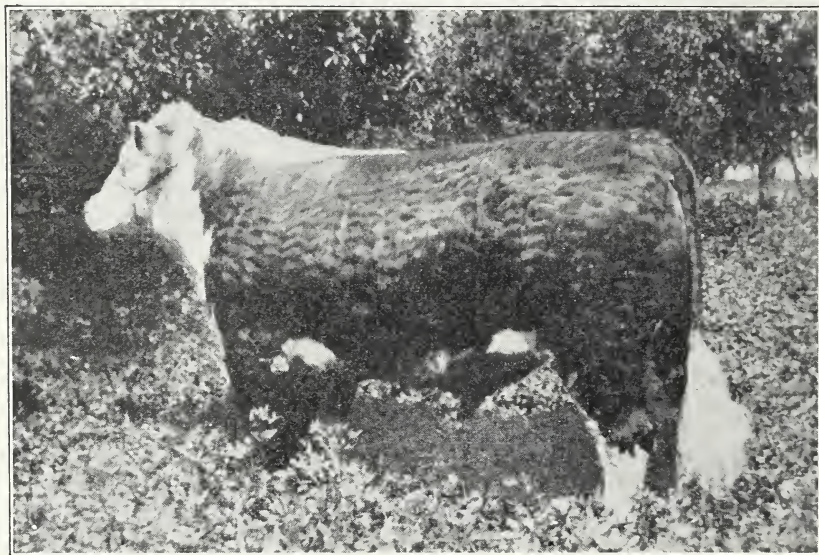


FIG. 1.—This purebred Hereford weighed 1,200 pounds at just a year old, illustrating rapid gain combined with good quality. It is owned by one of the stockmen who furnished the department with information concerning their breeding experiences

Many stockmen emphasize the greater salability of purebreds. "Buyers in this locality always come to me first," is a typical comment. Another remarks, "Sales are easily and satisfactorily made and higher prices are received."

The influence of good breeding on uniformity is illustrated by the experience of a Colorado breeder, who says: "Ten years ago I bought 200 head of scrub cows. They were all colors of the rainbow. I have used purebred sires and now my cows are all smooth and every one has a white face, besides being 50 per cent larger."

Others lay emphasis on the better care and management through greater pride in possession, with resulting increase in returns. There were frequent references also to the gentler disposition and intelligence of purebreds and pleasure in handling them.

SELLING SURPLUS PUREBREDS AS BREEDERS

Besides obtaining the benefits of greater utility value from their purebreds, about four-fifths of the livestock owners report sales of some surplus animals for breeding purposes. Their success in this venture is presented briefly in Table 3.

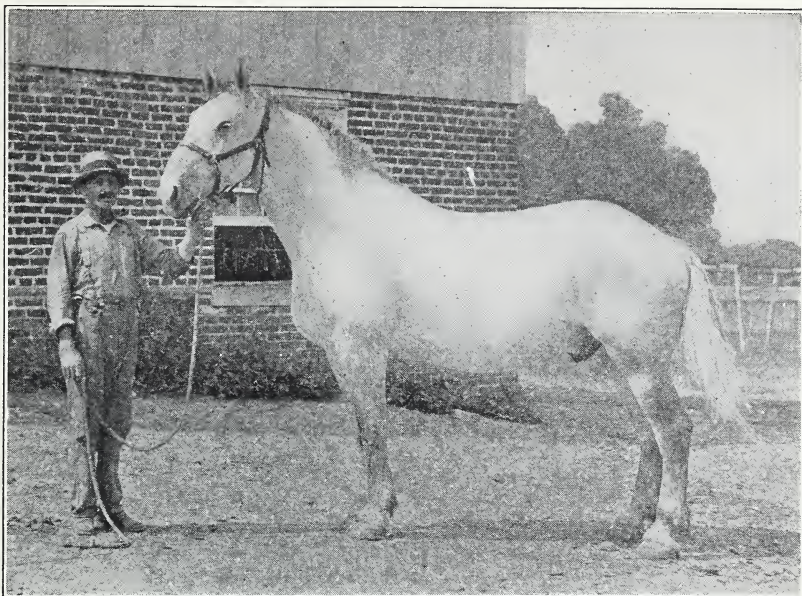


FIG. 2.—Purebred Percheron, weight 1,800 pounds, used as a farm work horse. Owners of purebreds report them as being more intelligent and more easily handled than "the sorry kind"

TABLE 3.—Success in selling surplus purebreds as breeding stock

Nature of comment	Percent of total comment
Success:	
Unable to supply demand.....	1.6
General success.....	50.3
Success except during temporary periods of financial depression.....	4.8
Difficulty:	58.7
Slow sales.....	
General lack of demand.....	9.6
Purebreds not appreciated.....	7.3
	7.7
	24.6
Qualified:	
Combinations of successes and difficulties.....	9.1
Miscellaneous.....	9.6
	18.7

The figures show a majority report on successful sales of surplus purebreds. Difficulties are so numerous, however, that they merit additional comment. Lack of demand was due to various condi-

tions partly within the control of breeders. The quality of stock offered was mentioned in several as the reason for difficulty in making sales. "I have never had any difficulty," one man writes, "in selling surplus purebreds as breeders since I improved the type."

In the case of dairy stock, lack of production records in both the male and female lines of ancestry is a damper on sales. Several stated frankly that the quality of some of the surplus stock offered was not particularly good. In other instances difficulty was due to the type of stock raised locally. It was reported difficult to sell purebred beef animals in dairy districts and vice versa. Even in the same class of stock, a breed not popular locally was hard to sell. Others



FIG. 3.—Purebred Southdown lambs on pasture. Well-bred animals attract attention of passers-by and are living advertisements of good farming

had only a few head of surplus stock and they preferred to sell at an unsatisfactory price rather than to incur the expense of advertising. Especially in cases of local surplus, failure to advertise or to show stock at fairs contributed to the difficulty in making sales.

According to comments that accompanied the reports, bull calves were the most difficult kind of stock to sell. This was especially true of dairy breeds in the New England States and in New York and Pennsylvania. There were certain other special reasons, such as cattle ticks in the quarantined portions of the South.

In contrast to the comments reporting lack of demand and failure of prospective buyers to appreciate the value of purebred stock was the much larger number of reports telling of success in making sales.

Briefly, the sales problem appears to be largely one of satisfactory quality of the stock offered, combined with personal enterprise in maintaining breeding and production records and in attracting buyers. (Fig. 4.)

RESULTS OBTAINED WITH PUREBRED SIRES

Of particular significance in livestock improvement by the grading-up method is the result of experience with purebred sires. Of the 525 livestock owners reporting, 472—about nine-tenths—furnished specific data on the quality of offspring obtained. Depending on the

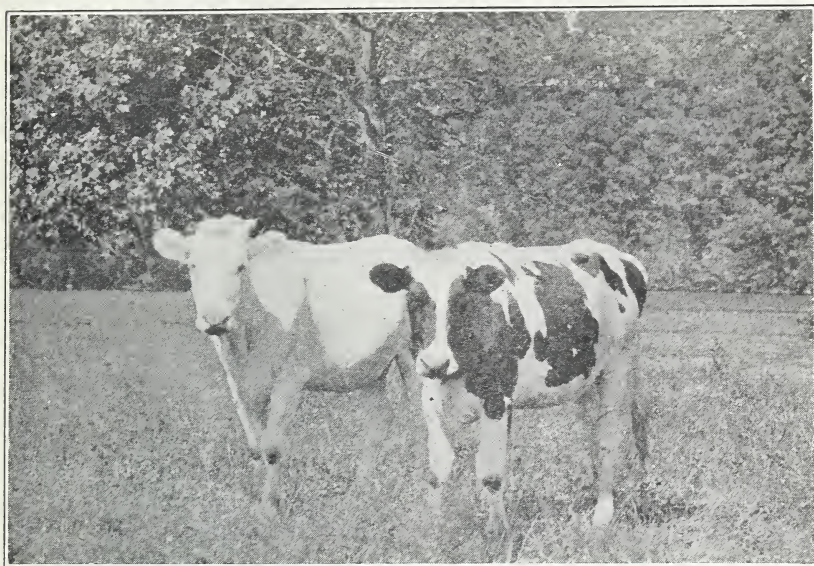


FIG. 4.—Heifer calves from purebred stock but not salable as purebreds, owing to lack of registration papers for dams. Records of breeding and production make good stock more desirable and valuable

females used, the offspring were purebred, crossbred, or grade. Table 4 gives a summary of the comments, and Figure 5 illustrates a typical experience.

TABLE 4.—*Reports on satisfaction with progeny of purebred sires*

Nature of comment	Per cent of total comment
Satisfied:	
Unqualified.....	83.9
With occasional exception.....	6.7
Except general desire for better.....	5.5
Dissatisfied:	
Because of desire for better.....	3.0
Unqualified.....	.9

The figures, with slight exception, show either a general satisfaction or a desire for still further improvement. Comments in the reports frequently stated that greatest progress was possible only when sires

of superior quality were used and that a desire for still further improvement was the basis of success in breeding.

CAUTION REGARDING UNTRIED SIRES

Many placed stress on getting a high quality of purebred sires at the outset instead of starting with cheap, untried sires. The expensive experience of a New England dairyman illustrates this point. He had purchased a bull of creditable breeding on the male side, but the dam, he explained, was "just a purebred cow," with no production records. "I had a herd of grades," he continued, "30 in number, that milked from 5,000 to 8,000 pounds of milk a year and which had taken a lot of time and money to get together. I raised

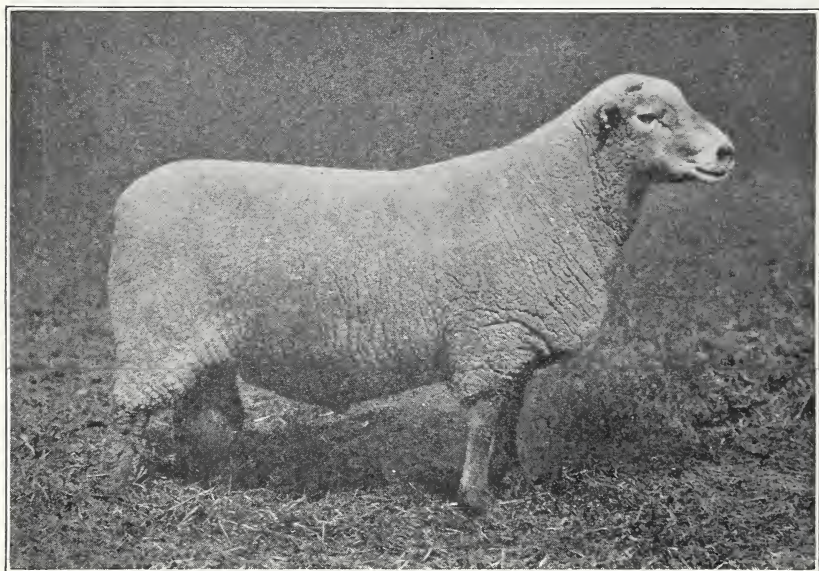


FIG. 5.—A 2-year-old Southdown ram, prize winner at eastern shows, and used by a Massachusetts breeder as a farm sire; weight as shown in picture was 225 pounds. This ram later sold for \$100. Eight purebred yearling rams which he sired averaged about \$40 each when sold to head grade flocks

22 heifers from this bull before the first one freshened. Not one of them gave 25 pounds of milk a day with the first calf. I stopped using the bull and kept the best females to freshen a second time. There was not much improvement. The bull and every one of his heifers were sold for what I could get, which was not much. By that time a number of my cows were getting old. It was a case of buy more cows to keep my herd in good numbers as well as milk. With four years lost, and I don't know how much money, I learned not to buy an animal because it is registered, but to buy an individual whose ancestors have made good, with no weak points in his breeding, and then pay the price. It's the cheapest by far in the end."

Another breeder declared that progress depends largely on the ability to recognize good individuals. But most comments on the

progeny of purebred sires included expressions like these: Better feeders and fewer runts; mature more quickly with less feed; purebred sires bring good calves from scrub mothers; heifers more sure to be good milkers and more persistent; in beef cattle and hogs it is the ease with which they gain and finish for market; ready sale and good price at any time of year.

SALE VALUE OF PUREBRED-SIRE OFFSPRING

As an approximate measure of the benefits resulting from purebred sires, figures were obtained on the relative money value of their offspring compared with offspring of nonpurebred sires. The sale value of each was used as a basis for comparison. The average of



FIG. 6.—First-class Shorthorn steer obtained by using a purebred sire with a common cow. (Sni-a-Bar Farms demonstration)

464 experiences on this point showed 49.4 per cent superiority in favor of the offspring of purebred sires. Many striking instances of successful investments were given. A breeder who started 11 years ago with one heifer and one bull calf, the two costing less than \$200, sold last year, he states, "over \$3,000 worth of stock without impairing the herd. The farm is run on a strictly farm basis."

"The best-producing animals are just like the best and richest soil—less work, larger returns," is the view of another.

A dairyman remarks, "By using a purebred bull on mature cows, the offspring gave 30 per cent more milk than their dams. Then I bought some registered heifers and at two years they gave more milk than the grade cows."

EXPERIENCES IN OBTAINING GOOD PUREBRED SIRES

The practical matter of obtaining satisfactory purebred sires for improving farm livestock received study with results contained in Table 5. It represents the experience of 492 persons.

TABLE 5.—*Experiences in obtaining good purebred sires*

Nature of comment	Per cent of total comment
No difficulty.....	71.5
No difficulty, except price.....	8.6
Difficulty due to special requirements.....	15.4
Miscellaneous.....	4.5

The "special requirements" mentioned in the table include reference to breed, type, quality, and other points of an unusual character. An Ohio sheep breeder remarks that so many have used French blood in breeding American Merino sheep that it is difficult to find a ram which does not contain French blood. Another had difficulty in obtaining locally a certain breed of goats. In the South the presence of cattle-fever ticks is responsible for some difficulty in obtaining the desired quality of stock.

But by far the greatest difficulty was to obtain the quality and type desired within a reasonable distance and at a price the purchaser was willing to pay. Notwithstanding occasional reports that prospective purchasers prefer to obtain stock "from a distance," the only reason for doing so, according to purchasers themselves, is their need for quality and type not found in locally bred stock. The comments indicate an aversion to paying high transportation costs with attendant risks of long transit. Yet there appears to be a determination among experienced breeders to get the desired type and breeding even at great trouble and high price, because of their faith in the ultimate results. A Montana stockman tells of difficulty in getting sires to suit him and declares, "I have gone as far as 1,200 miles to get the kind of sire I wanted."

"They come high," another breeder explained, "but are worth what they cost. I saw the need of better cattle and sold my scrubs and bought registered Herefords. They have more than paid for themselves." A typical experience of those who have made good selections is this comment from a West Virginia breeder who raises beef cattle, horses, and hogs. "I have no difficulty, as I always take plenty of time to inspect sires before disposing of my old ones. I have started several herds near home and have shipped to new breeders in other States."

The least difficulty in obtaining good purebred sires was reported from the Corn Belt, the greatest being in the South and Southwest.

DEGREE OF SATISFACTION WITH PUREBRED SIRES

For the most part, users of purebred sires were reasonably well satisfied with them as individuals. Of 459 users, 380 reported general satisfaction, 71 were satisfied except for the desire for still better

animals, and 8 were dissatisfied. In general about 98 per cent of the owners appeared to have obtained satisfactory purebreds as sires.

FINANCIAL RETURNS FROM PUREBRED SIRES

The average estimated increase in financial returns traceable to the use of purebred sires was 48 per cent. This figure represents the experience of 331 persons who were able to furnish data on the subject. It compares rather closely with 49.4 per cent, the figure already given as the increase in sale value of offspring from purebreds. Thus the use of purebred sires yields close to one-half greater returns than are commonly derived from nonpurebred sires.

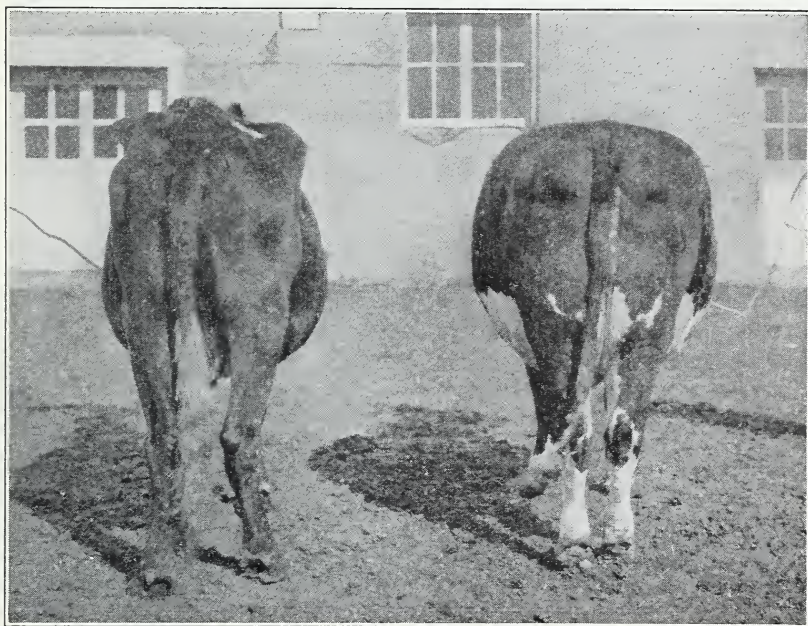


FIG. 7.—A scrub cow (left), a very poor beef animal and evidently a poor milker, compared with a purebred beef cow (right) of excellent conformation

PROLIFICACY A FACTOR IN RESULTS

Since purebred sires have a higher money value than scrubs or grades, the earning power of purebreds must obviously be at least proportionately greater in order to make them profitable—especially to such an extent as 48 per cent. The profitable results are due largely to the fact that a purebred sire gradually improves an entire herd or flock. The influence of purebred females is not so extensive, but nevertheless there is an accumulative profit resulting from the natural tendency of livestock to be prolific. Especially in the case of poultry and hogs, which multiply rapidly, a few animals of pure breeding may in a few years become the ancestors of hundreds of purebreds.

INFLUENCE OF PUREBRED-SIRE USERS ON METHODS OF OTHER FARMERS

Both from a buying and selling standpoint, it is worth while to know what influence the use of purebred sires has on methods of other farmers. That is, do other livestock owners in the locality also acquire good sires and to what extent? The question involves many human elements and any figure must be regarded only as a general indication.

More than half of the purebred-sire users reported that their example evidently had caused others in the locality to improve their stock.

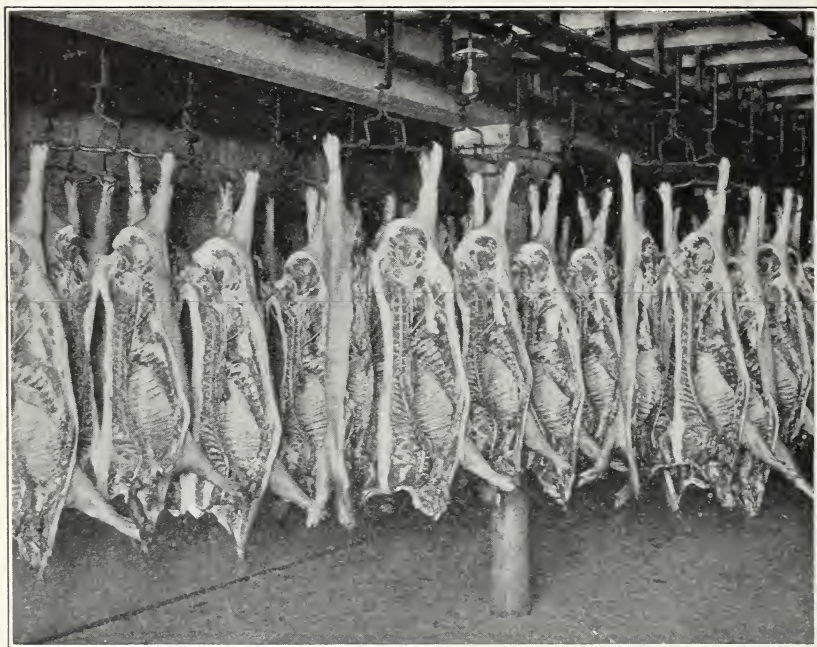


FIG. 8.—Hog carcasses in a packer's cooler. This is the ultimate destination of hogs, a fact to be kept in mind. Good purebred stock is prolific, makes economical gains, and matures quickly

Comments on this question also contained frequent references to the satisfaction derived by influencing others to breed better stock. "In 15 years," an Ohio breeder says, "I have supplied ewes to establish six purebred flocks, and have also established several herds of Shorthorns and Jerseys."

"Fifty per cent of my neighbors get their sires from me" is the comment of a Nebraskan on this subject. From the same State comes the comment, "During the last 30 years I have made some effort in trying to induce others and have sold 1,100 boars and sows for breeding purposes."

INCENTIVES TO RAISE SUPERIOR LIVESTOCK

The various influences which cause people to take up the breeding of superior livestock show that the decision is generally one of

deliberation. Reading and observation are the two most impelling factors, as is seen in Table 6.

TABLE 6.—Principal factors influencing the breeding of superior livestock

Influence	Per cent of total comment	Influence	Per cent of total comment
Reading.....	36.0	Home influence.....	4.8
Observation.....	17.5	College instruction.....	4.1
County agent.....	12.9	Natural liking.....	3.6
Meetings, institutes, etc.....	10.1	Livestock-club work.....	2.4
Sales, fairs, and shows.....	6.0	Miscellaneous.....	2.6

From the influences listed it is clear that most decisions to raise purebred livestock are those of serious judgment rather than of impulse. Among the classes of reading matter, agricultural periodi-



FIG. 9.—Stock-judging pavilion at a State fair. Fairs, shows, exhibitions, and public sales are important influences in the improvement of domestic animals

cals were mentioned most frequently. Bulletins were also spoken of as important influences. The prominence of "observation" is best explained by incidents which show the degree to which this quality exists among persons interested in fine livestock.

One farmer became a breeder of purebred livestock because, in his own words, he "watched a neighbor who received a larger cream check from a herd of 15 purebred cows than the average farmer was receiving from 25 to 30 cows and on less feed."

A dairyman says that he saw the value of purebreds after he acquired a cow that he "never could dry up. She gave 15,000 pounds of milk a year for nine years."

"As a boy," declares a Florida stockman, "I saw that my father never would make a success with scrubs."

Another tells that at a county fair he saw the offspring of scrub and purebred bulls from the same cow, and was convinced.

"I am a cattle buyer," another states, "and found that well-bred cattle would always sell."

"My neighbor," still another remarks, "had nothing but purebred hogs and dairy cows, and his returns were much better than mine."

The influence of poultry on the quality of other farm stock is told by a Nebraska farmer. "The 'boss' of this farm is not blessed with a large family nor an overplus of muscular force," he states, "therefore everything must pay its way. We first saw the light with purebred Wyandotte chickens—found we had more uniform birds, more eggs, and a better market. Then wife began to keep books on our grade cows, and I discovered that I had been chambermaid for a bunch of star boarders. So we bought a few purebred heifers (always



FIG. 10.—This Buff Orpington pullet is credited with laying 278 eggs during her first year and winning fourth prize in a 10,000-bird show. Such a bird illustrates the utility value resulting from pure breeding and selection

had purebred males) and started without any idea of ever selling breeding stock—just to have good milkers and sell the calves as baby beef. Well, the neighbors liked the purebreds better, and they came and bought the surplus; still doing it. Notice we stress utility. If the pedigree is fancy, all well and good; but the individual must make good on the utility basis. Foundation stock has gone to four adjoining States and to most of the counties lying close, without expensive advertising or public sale. Common stock and culls are never priced as breeding stock."

NEEDED MORE INCOME AND GOT IT

A Connecticut farmer who raises cattle, hogs, and poultry tells that he became interested in the breeding of superior livestock "because we had to have more income." This farmer has

used purebred sires exclusively for the last 11 years. Both the utility value and sale value of his stock have become greater and his financial returns have increased 100 per cent. He adds that "better breeding leads to better care and to more profits." The data appear to show conclusively that well-bred animals are good property not simply for the experienced breeder but for every farmer willing to give them the proper care and opportunity to prove their worth. The lesson in Figures 11 and 12 is of interest in this connection.

METHODS OF FURTHER IMPROVEMENT

Of probable interest to livestock owners are the methods by which breeders, whose experiences have been given, expect to improve their livestock still more. The use of high-quality, purebred sires, together

with general care in mating, are the chief methods. Females of superior type likewise receive prominent mention.

TABLE 7.—*Methods used by purebred livestock owners to obtain further improvement*

Method	Per cent of total comment	Method	Per cent of total comment
Use of superior purebred sires	36.4	Better care	5.4
Selection and care in mating	28.0	Testing for production	3.5
Use of superior females	9.3	Line breeding	2.7
Culling of less desirable animals	7.1	Study of literature and records	2.2
Better feeding	5.4		

The inclusion, in the table, of such items as better feed and care refer to the desire for developing better individual types. These

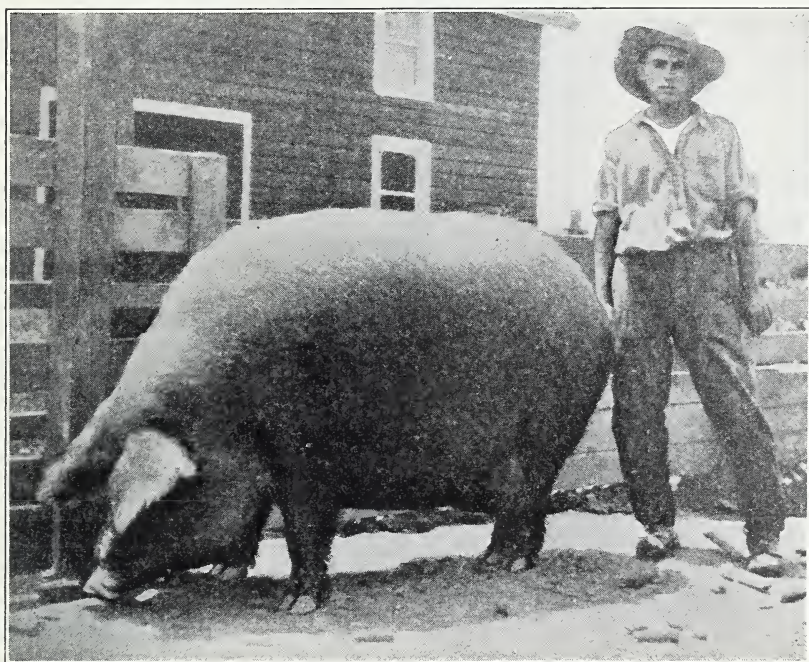


FIG. 11.—A purebred Duroc-Jersey boar formerly used by the United States Department of Agriculture at an experiment farm. A subsequent owner, unfamiliar with the value of size in swine, slaughtered him. Weight after bleeding was 1,110 pounds; age, 3 years and 10 months

factors help to determine size and conformation, thereby influencing values and sales. Feed and care are also of great importance in determining the utility value of any kind of livestock. A Texas breeder illustrates this point by the remark, "One big trouble in our community is that there are some who expect a cow to give milk simply because she is registered and fail to realize that feed is essential even with purebreds. The remedy, I believe, is in register-of-merit testing, which tells the tale."

The value of well-kept records was referred to frequently. That breeders of other animals besides cattle and fowls are recognizing the value of records is evident from current interest in establishing a register of merit for hogs. Among the points now being considered in such a system of records are: Age of sow, number of pigs in litter, number raised to 10 weeks old, and average weight of pigs at 8 months old. Such records, properly supervised and made available

to the public, should help greatly in obtaining satisfactory breeding stock and in adding to the utility qualities of hogs.

An interesting sidelight on the utility value of beef cattle is shown in a statement received by the department from an Ohio butcher. "When we kill an animal that has an exceptionally good dress," he states, "we display it in our window, giving age, live weight, dressed weight, and per cent of dress to the hundred. In this way we can prove to the farmer that he gets more live weight and we get more dressed weight from well-bred stock than from inferior stock of the same age."



FIG. 12.—Carcass of hog shown in Figure 11; dressed weight (warm), including liver, was 1,005 pounds. This boar was improving the type and size of hogs in the community. He was too valuable to have been slaughtered in his prime

GENERAL PROBLEMS AND DIFFICULTIES

In considering the figures presented, it should be remem-

bered that they are the composite expression of many experiences. This is necessary in order to arrive at dependable general conclusions. Some breeders have had still greater successes, while at the other extreme a few have experienced serious disappointments. A brief description of the latter may help to show that the business of handling purebred stock involves risks as well as rewards, and, owing to the greater value of purebreds over other stock, both profits and losses are relatively greater.

A stockman in eastern New Mexico relates this experience: "I bought a bull and after his second season he died. I bought a cow and she got locoed. I am out of pocket at least \$200 because of my purebred venture. The 16 heifers I have retained from the purebred bull have straighter backs than scrub offspring—that's about all." This man adds that he is leasing a purebred bull for the next year.

A Florida dairyman tells this costly experience: "I recently lost two registered Jersey heifers brought from Kentucky, also a very fine registered bull, from tick fever." He nevertheless reports general satisfaction with his six years' experience in raising improved livestock. The offspring are satisfactory, with a few exceptions, and represent an improvement of 50 per cent over the general livestock of the community.

A few persons reported high tax assessments since raising purebreds and protested against the unfairness of such taxation, especially after they have been a source of wealth and other benefits to the community. The most common difficulty reported, however, is that of making profitable sales of surplus breeding stock, owing to lack of demand or unwillingness of purchasers to pay more than "scrub prices."

The evidence when examined closely shows that the merits of purebred livestock are much like those of any other efficient piece of farm equipment. It does its best work in the most capable and skilled hands. But in the hands of those who do not understand it or who will not give it the proper study it becomes less useful and may even be a liability.

The foregoing information represents briefly the results of the questionnaire conducted in 1921. Continued popular interest in the utility value of purebred livestock led the department to obtain further information in the fall of 1924. A total of 653 livestock owners in 45 States reported their experiences on the various topics that follow.

RESULTS OF SECOND QUESTIONNAIRE

COST OF RAISING PUREBRED LIVESTOCK

To throw light on the question of the relative cost of raising purebred and common stock the department asked for the experiences of breeders who had raised both kinds. The question asked, "In your experience does it cost more or less or about the same to raise the average purebred to maturity, compared with raising a scrub to maturity? In answering you should not be influenced by the comparative value of the two animals after they have been raised; consider investment in breeding stock, feed, care, time required to reach maturity, etc."

Livestock owners and investigators have differed on the correct answer to this question. Purebreds, it is well known, are worth much more when raised, but the moot question is, "Which costs more to raise?"

Of 602 replies 229 stated that, considering everything, the cost was practically the same, 204 stated that purebreds cost less to raise, and 169 contended that the cost of raising purebreds was greater.

The differences of opinion on this subject naturally require explanation, which was forthcoming in numerous comments accompanying the figures. In the principal dairy States, including Minnesota, Wisconsin, New York, and the New England States, the prevailing sentiment strongly indicated that purebred animals cost much more to raise. The vote was more than two to one, and the percentages expressing the greater cost were frequently as high as 100 per cent. On the other hand, in regions where the production of meat animals predominates, as in Texas, Oklahoma, Nebraska, Indiana, and Kentucky, the owners were strongly of the opinion that purebreds cost less to raise in comparison with scrubs. The percentages were not so high, but there were more of them.

Apparently the factor of early maturity is much more important in the case of meat animals than with dairy cows, and this factor has much to do with economy of production. Numerous reports explained the basis for statements that purebreds cost less to produce.

"A purebred hog will respond to feed quicker," an Oklahoma breeder stated, "and do better on the same or less feed than a grade or scrub." A farmer in Nebraska reported the same observation in almost the same words, declaring, "Purebreds seem to respond better to the same care and feed and generally put on more gain for the feed consumed." A Florida farmer, owning 375 head of cattle, hogs, and sheep, expressed his experience briefly with the remark, "Purebreds gain more and faster—about one-third more in the same length of time with the same quantity of feed."

Numerous other comments from all parts of the country told of the earlier maturity of purebred livestock and of its greater weight at the same age. Occasional sidelights on the question dealt with such related questions as feeding and care. In some instances persons answering the questionnaire had kept records of comparisons they had made. An Ohio farmer told of purchasing six purebred pigs and placing them with four grade pigs of the same age. "The purebreds," he reported, "made 20 per cent more gain in five months than did the grades."

Of the reasons advanced by those who declared that purebred stock cost more to raise, the item mentioned most often was the greater first cost and the consequent larger interest on investment. A few breeders of purebred herds told of financial losses and discouraging experiences. They asserted that it was necessary to compete with wealthy amateurs who engaged in the business as a hobby and that it was unwise for the small farmer to undertake it, on account of the capital, time, skill, and experience necessary. In this connection the desirability of undertaking the breeding of purebred livestock on a small scale at first is obvious. In discussing the cost of raising purebreds one stock owner placed special stress on the point that inexperienced farmers should make the change slowly.

A careful analysis of all the replies showed that the chief causes which tend to make purebred animals cost more to raise are: Larger initial investment, greater care which such animals usually receive, and cost of registration. The chief factors mentioned as making purebreds cost less to raise are: Earlier maturity resulting in quicker turnover on investment, less feed, and fewer losses owing to the better condition of the breeding stock. These two sets of factors tend to balance each other with a slight leaning toward greater

economy in raising purebreds. The question, as worded, left out of consideration the comparative values of the two classes of animals after being raised. But many persons who stated that purebreds cost more to raise pointed out that their much greater value when raised more than justified the expense.

MARKETING PUREBREDS AS MEAT ANIMALS

To obtain information on the sale of purebreds for meat purposes, farmers were asked to state the kinds of purebred animals and the proportion of each sold that way. In this connection it may be explained that the majority of persons answering the questionnaire were average, progressive farmers rather than professional or especially skilled breeders. The extent to which purebreds are marketed as meat animals is seen in Table 8.

TABLE 8.—*Extent to which purebreds are sold as meat animals, by classes*

Class	Per cent sold for meat
Purebred swine.....	75.1
Purebred sheep.....	62.6
Purebred cattle.....	41.8
Weighted average for all classes.....	62.0

The foregoing figures represent chiefly the records or estimates of purebred-stock owners who sell a rather large proportion of their animals for meat purposes, that is, who are in the business of raising stock for market. The figures include, however, a few such animals as barren heifers and animals past their breeding usefulness.

Judging from numerous comments the reasons for using the market outlet so extensively, as well as selling stock for breeding purposes, were the greater convenience and equally satisfactory returns. An Ohio breeder remarked that "probably 95 per cent of the hogs that go to market from this township are purebred." A hog man in South Dakota related this experience: "We had a purebred-boar sale last fall. When I figured the expense, to say nothing of the labor, I found that on the average they sold for \$5 per head below what they would have brought on the market." A Tennessee farmer who raises cattle, sheep, and hogs described similar conditions in his locality: "All of my males are registered and most of the females," he stated, "but the butcher will pay more for my animals than the breeders. For the last two years farmers have been unable to buy purebred stock in competition with the butcher."

A spirit of satisfaction and independence in having two good market outlets permeated the discussion. A Missouri farmer remarked, "We sell what we can for breeding purposes, and the purebreds we sell for meat generally top the market." Voicing a similar opinion, a stockman in Oklahoma stated: "The difference in price on the market more than pays to keep purebreds, even though we sell no breeding stock." These comments were typical of many others, though in a few localities there were complaints that quality brought no market premium. Such comments applied chiefly to small markets and to the ticky area in the South.

RELATIVE PROFITABILITY OF PUREBREDS, GRADES, AND SCRUBS

On the question of the relative profitability of purebred, grade, and scrub livestock for meat purposes, there was a landslide of opinion in favor of purebreds, with well-bred grades second. Following is a summary of the replies in each case:

TABLE 9.—*Profitability of purebred, grade, and scrub livestock for meat purposes compared*

	Per cent
Purebreds and scrubs compared:	
Purebred animals more profitable as meat producers.....	97.3
Scrub animals equally profitable or more so.....	2.7
	100.0
Purebreds and grades compared:	
Purebred animals more profitable as meat producers.....	75.8
Grade animals equally profitable or more so.....	24.2
	100.0

Although the opinions show a large majority in favor of purebred animals, the negative sentiment is large enough to merit explanation. Much of the negative comment stating that scrubs and grades were fully as remunerative as meat animals came from dairymen, some of whom stated that dairy beef, especially old purebred bulls, brought unsatisfactory prices. In comparing purebreds with grades, there were frequent assertions that high-grade stock was practically equivalent to purebred from a utility standpoint, because of the large proportion of pure breeding in the high grades. The evidence is strongly in favor, however, of well-bred meat types as an element in profitable stock raising.

A Nebraska stockman expressed the opinions of many with the brief remark, "I find that purebreds are of more uniform type, feed out better and more quickly, and therefore put on more gain with the same or less feed and in less time." Others told of the top prices for purebreds, ready sale on slow market days, ability to fatten on grass with a minimum of grain feed, and of finishing quickly for profitable, early markets. A westerner emphasized the importance of color to show that cattle are of the meat breeds. "Whiteface, red, roan, and black cattle always attract the buyers," he stated, "but a brindle, or yellow or black-and-white spotted steer, even of good conformation, finds a less ready sale. The buyers know from experience that such stock will not dress out so well."

REGISTRATION OF PUREBRED LIVESTOCK

The agricultural census of 1920 ascertained, for the first time, the number of registered purebred livestock of the different kinds and breeds on farms in the United States. But it is known that many breeders and feeders do not register all their purebred stock. The reasons are numerous, but as appears later the most important are the intention to use the animals for utility purposes and the lack of desired qualities.

The inquiry called for the listing, in parallel columns, of registered purebreds and those eligible but not actually registered. It included all the principal classes of farm livestock but considered only

mature animals. The total number of animals entering into Table 10 was 17,058, chiefly sheep, hogs, and cattle in the order mentioned. Most of the animals were widely distributed among many farms, but a few large groups of range stock are included.



FIG. 13.—Baby beefs less than a year old and averaging about 750 pounds. Note uniformity in size and conformation. Good breeding and proper condition are essential in producing this type of early maturing market cattle

TABLE 10.—*Extent to which mature purebred animals are registered*

Males:	Per cent	Females:	Per cent
Bulls	76.6	Cows	61.0
Stallions	77.2	Mares	38.2
Boars	63.7	Sows	49.5
Rams	88.6	Ewes	22.3
Jacks	80.0	Jennets	33.3
Average (weighted) for males		75.3	
Average (weighted) for females		48.1	
Average (weighted) for males and females		51.4	

In explanation of the average for both males and females the total number of males, registered and unregistered, reported by the persons answering the questionnaire was 2,098, whereas the corresponding figure for female stock was 14,960. The influence of the larger number in determining a weighted average is evident.

The figures in the table are, of course, a very small fraction of the purebred livestock in the country, but they represent all the mature purebred animals reported on the several hundred farms which cooperated in the study. Roughly, they indicate that only a trifle more than one-half of the mature purebred animals on farms and ranches are actually registered.

The questionnaire also throws light on the principal reasons for not registering purebred animals that are eligible for registration. Table 11 is a greatly condensed summary of views on this question.

TABLE 11.—*Reasons for not registering purebred stock eligible for registration*

	Per cent of total
Animals to be sold for slaughter.....	28.9
Animals of poor individuality.....	21.9
Little demand for registration papers when stock is sold.....	21.9
Carelessness in attending to registration.....	12.4
Animals off color.....	11.0
Other reasons.....	3.9
Total.....	100.0

The "other reasons" mentioned in the table included such remarks as the following: "(1) I furnish papers only when sale is made; (2) not sure of ability to sell, so cost is useless; (3) cost of registration and double taxation on registered stock; (4) too much time and work to keep up the papers with small call for them." Numerous other comments were in the same vein, with frequent mention of the expense of registration and added taxation. The chief cause, however, for failure to register purebred animals, as seen in the table, is intention to sell them for slaughter. A surprisingly large number of owners asserted that the butcher would pay higher prices than the animals would bring as breeding stock. Information already presented gives ample basis for that conclusion.

REGULARITY IN USING PUREBRED SIRES AS A GENERAL PRACTICE

To learn how consistently owners of purebred stock make a practice of using purebred sires, the department asked for a frank statement based on actual farm practice. "Please state frankly whether you consistently make a practice of using purebred sires," the question read. There was no specified period of time and the question included all kinds of sires. The response to this question was exceptionally large, with the following results:

TABLE 12.—*Degree to which purebred stock owners use purebred sires exclusively*

	Per cent
Use of purebred sires with no exceptions.....	78.4
Use of purebred sires with rare exceptions.....	17.9
Failure to use purebred sires regularly after a reasonable trial.....	3.7
Total.....	100.0

Of the first class of purebred-sire users, comprising more than three-fourths of the total, many claimed a straight record for using such sires without exception for 10 years or more. In the second class accidental breeding by roaming or "breechy" scrub and grade bulls was the most common cause of the exceptions. The long distance necessary to go to obtain the services of a satisfactory purebred sire was also an important cause. In the case of dairy stock a few persons who were otherwise regular users of purebred sires used the nearest convenient bull to freshen their cows when they did not intend to raise the calves. The remaining explanations were of varied nature, including statements of dissatisfaction with purebred sires because of poor individuality or failure in the past to produce desired results. Briefly, the table shows that about 96 per cent of the persons answering the inquiry used purebred sires as a general practice, though with occasional exceptions (fig. 14).

On the subject of offering better breeding stock for sale there was almost unanimous agreement. In this connection a breeder in Washington State urged, "Send all culls to the butcher. Encourage the purchase of tested and mature stock. When young, untested stock is sold the breeder should keep in touch with the purchaser, so that if the stock does not turn out as it should, through no fault of the purchaser, the breeder can make the deal right. From experience, I know it pays directly and indirectly, aside from the fact that it is the fair way to do."

"Insist on the seller giving value in the animal itself, not in the pedigree of an ancestor," another breeder advised. A Montana stockman urged greater persistence in following a definite plan of breeding. He explained that his neighbors "switch from one breed to



FIG. 14.—Western sheepmen attribute much of their success in obtaining good yields of mutton and wool to the use of purebred sires. In large flocks the influence of good rams is especially noticeable. Ability to produce early lambs profitably is another benefit.

another and back again until to-day they have only a menagerie and could not put 10 per cent of their calves in any sale."

The stockmen cooperating with the department by furnishing the information here presented also suggested more educational work in livestock improvement through the press, speakers, and general extension channels. The trend of comments on this subject was optimistic, expressing the belief that good work was being done, but a little more would bring the desired results faster.

SUMMARY

Based on utility alone—apart from breeding or sales value—purebred livestock has an earning power from a third to one-half greater

than scrub stock. The average superiority of purebreds over scrubs for all classes of farm animals is about 40 per cent.

Of the principal points in which purebreds excel other stock, the most prominent are: Superiority and uniformity in conformation and type, greater sale value, early maturity, and economy in the conversion of feed into meat, milk, and wool.

Surplus purebreds, if of good quality, are usually salable as breeding stock; but success in this field depends largely on breeding and production records and on the business ability of the breeder.

With rare exceptions, purebred-sire users are satisfied with the quality of the offspring obtained, except that the desire is created in many cases to improve the quality still further.

The progeny of purebred sires have practically a 50 per cent greater sale value than the progeny of sires not purebred.

Purebred sires of good quality are readily obtainable in the experience of three-fourths of the breeders reporting. The principal difficulty is paying the price, but there is practically unanimous agreement that the results justify the cost.

The average increase in financial returns, from livestock raising, traceable to the use of purebred sires, is 48 per cent.

Most breeders of purebreds exert a noticeable influence in improving the quality of livestock in their neighborhoods.

The factors which tend to make purebred livestock more costly than ordinary livestock to raise are counterbalanced by other factors, such as earlier maturity and more efficient use of feed. The average net result is a slight leaning toward greater economy in raising purebreds, especially among meat animals.

About 60 per cent of purebred livestock appears to be marketed directly for meat purposes.

The classes of purebred stock sold to the largest extent for meat are, in the order stated: Swine, sheep, and cattle. This is also the same order as their prolificacy.

Purebreds are much more profitable to raise than scrubs, and somewhat more so than grades, the degree depending on the proportion of pure breeding the grades possess.

The value of purebred livestock, when raised, greatly exceeds that of inferior animals.

Only about one-half of the purebred animals eligible to registration are actually registered.

The proportion of purebred males registered exceeds that of purebred females by more than one-half.

The principal reasons for not registering purebred animals are intention to use them for meat and the fact that the owner does not consider them to be of sufficiently high quality.

About 96 per cent of persons who give the use of purebred sires a fair trial stick to the general principle of using them for all classes of stock.

Of the chief influences which cause farmers to become breeders of purebred livestock, the three foremost are: Reading agricultural periodicals and bulletins, general observation, and county agents.

The principal methods by which breeders expect to continue to improve their stock are: Use of superior sires, careful selection and mating, and use of superior females.

